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schools teaching manual training and domestic science a grant of £70,000 a year for ten years is recommended. The report also proposes the establishment in each province of a board qualified to carry on industrial training. It advocates the provision of suitable and adequate apparatus and equipment for teaching purposes, the foundation of scholarships for students, the engagement of experts with experience in industrial training, and the creation of central institutions to supplement the work carried on by the provincial and local authorities. Workers in factories whose main task is to attend or to operate machines should, it is suggested, receive instruction which would develop all-round skill and increase their interest beyond the routine of automatic operations. Such training should be provided as will conserve and develop occupations in which skilled handicraft is required. The interests of the rural population should be preserved so far as possible by industrial training and technical education suitable to the needs of its workers. The needs of girls and women for organized instruction and training in house-keeping and home-making under modern industrial conditions should be recognized. The report also recommends that schools for fishermen should be established, and that provision be made for instruction in packing and curing. The distinguishing characteristic of the report is the attention which it gives to the problems of the rural communities.

THE U. S. Geological Survey has just issued, as an advance chapter from "Mineral Resources of the United States," a report by Alfred H. Brooks on the mine production of precious and semi-precious metals in Alaska in 1912. Metalliferous mining in Alaska, says Mr. Brooks, made important advances last year. Although the output of gold placers was less than in 1911, the installation of large plants, notably of dredges, in many districts is encouraging for the future of this industry. More important was the progress made in lode gold mining, the output of which was greater than in previous years. Copper mining also advanced, partly because several large plants

increased their output, partly because a number of small mines were developed on account of the high price of copper. The development of the coal fields still awaits the establishment of a definite policy in regard to the disposition of the public coal lands. The delay in securing cheap fuel for the territory has now for many years caused a stagnation in many industries. Railway construction and, to a certain extent, railway operation have stopped and many mining enterprises have been hampered if not entirely abandoned on account of the uncertainty as to the fuel problem. Very few Alaskans have any direct interest in coal claims or in mining, but the entire population of the territory is desirous of seeing the coal fields developed, because it is believed that this will bring about advancement in many other industries. Above all, it will encourage the operation and the construction of railways, which are all important to the territory. The total mine production of gold, silver and copper in Alaska in 1912 was valued at \$22,285,821, against \$20,505,664 in 1911, an increase of \$1,780,158. The value of the gold production of Alaska last year is estimated at \$17,145,951, that of silver at \$316,839. The copper output of Alaska for 1912 was 29,230,491 pounds, valued at \$4,823,031, an increase from 1911 of 1,962,613 pounds.

UNIVERSITY AND EDUCATIONAL NEWS

THE Florida legislature has made the following appropriations for the support and maintenance of the state institutions for higher education for the coming biennium: For the University of Florida at Gainesville, \$173,500, which includes \$30,000 for new law building, \$23,000 for farmers' institutes and publishing bulletins, \$15,000 for laboratory equipment and farm buildings for college of agriculture, \$10,000 for equipment and machinery for college of engineering, \$7,000 for heating plant to supply five new buildings; \$5,000 for sewerage and disposal system. For the Florida State College for Women at Tallahassee, \$148,000, of which \$30,000 is for dining hall and equipment, \$5,000 for domestic

science and women's institutes. For the Florida School for the Deaf and Blind, at St. Augustine, \$85,000. For the Florida Agricultural and Mechanical College for Negroes, at Tallahassee, \$24,000. For expenses of board of control, \$5,500. Total, \$436,000.

It is reported from Melbourne that a pioneer colonist, Mr. W. Robbie, has bequeathed £30,000 to Aberdeen University to establish scholarships.

A PUBLIC bequest amounting to £750,000 has been made by the will of Sir William Dunn. They include £2,000 to the institute of medical science of the University of London, and £2,000 to the London School of Economics.

THE registration for the year of students in regular courses at the University of California will exceed 5,300. If the summer session students be counted in, then the year's registration will exceed 8,000. Of American universities, only Columbia is larger. The enrollment at Berkeley up to the second day of registration was 4,645, or 660 more than on the corresponding date of last year. Of the 4,645 there were 1,500 new undergraduates, and, of these 1,500 new undergraduates, 1,300 were freshmen. The graduate students numbered 531, or eighteen per cent. more than on a corresponding date last year.

OHIO STATE UNIVERSITY has introduced an apprentice course in animal husbandry that includes two years study at the university and two years of practical work on a stock farm. The student in this course spends the first year at the university; the second on a stock farm; the third year at the university again, and the fourth year on another stock farm. The students are paid for their work while on the farm. The plan has interested a number of the leading stock men of Ohio and other states, and they are cooperating with the university in carrying it out.

IN the reorganized faculty of medicine of the University of Illinois appointments have been made as follows: Dr. Albert C. Eycleshymer, St. Louis, professor of anatomy and head of the department of anatomy of the

medical school; Dr. Richard Rupert, Chicago, instructor of anatomy; Dr. George P. Dreyer, Chicago, professor of physiology and head of the department of physiology, school of medicine; Dr. Bernard Fantus, Chicago, professor of pharmacology; Dr. Edgar Grim Miller, Columbia, Pa.; Dr. J. Craig Small, Chambersburg, Pa., and Dr. H. N. Walker, Harrisburg, Pa., assistant professors of physiologic chemistry; Dr. Edgar D. Coolidge, Chicago, professor of materia medica and therapeutics.

PROFESSOR CLARK W. CHAMBERLAIN has resigned the professorship of physics at Vassar College to accept the presidency of Denison University.

PROFESSOR A. L. MELANDER, head of the department of entomology and zoology at the Washington State College, Pullman, and entomologist of the State Experiment Station, has been granted a year's leave of absence for research work at Harvard University. Professor W. T. Shaw, zoologist and curator of the museum, will be acting head during the coming year. Mr. M. A. Yothers, assistant entomologist, will have charge of entomological investigations. Mr. E. O. Ellis, of the Iowa Agricultural College, has been elected to the position of instructor in entomology in the college and assistant in entomology in the Experiment Station.

DR. J. E. WODSEDALEK, of the zoological department of the University of Wisconsin, has been appointed professor of zoology and head of the department of zoology and entomology at the University of Idaho, Moscow, Idaho, succeeding Dr. J. M. Aldrich.

MR. WM. S. ALDRICH, of the Reclamation Service, has been appointed acting professor of electrical and mechanical engineering at the University of Arizona, during the sabbatical leave of absence of Professor W. W. Henley.

DR. CHRISTIAN A. RUCKMICK, of Cornell University, has been appointed instructor in psychology in the University of Illinois.

PROFESSOR W. H. YOUNG, Sc.D., F.R.S., professor of mathematics in Liverpool University, has been appointed Hardinge professor of

mathematics in the University of Calcutta, for the purpose of organizing there a new school of higher mathematics. As the duties of the post require his residence in India only from November to March, it has been arranged that he shall retain his professorship in Liverpool University.

MR. HAROLD PEALING, Liverpool, has been appointed lecturer in physics in the South African College, Cape Town.

DR. ALEXANDER TORNQUIST, of Königsberg, has been invited to the chair of geology and paleontology at Leipzig.

PROFESSOR HIS, of Berlin, who was asked to accept the appointment of director of the medical clinic, at Vienna, as successor of Professor von Noorden, has declined.

DISCUSSION AND CORRESPONDENCE

A PECULIAR DERMAL ELEMENT IN CHIMÆROID FISHES

WHEN recently in Washington, I was kindly allowed by Dr. Hugh M. Smith to examine the type of *Chimæra deani* Smith and Radcliffe (Philippine Islands), to see if I could discover any scale-like dermal structures hitherto unreported. Gently scraping the side of the animal, I readily procured a number of small scale-like objects, which when mounted and examined with a microscope were seen to be strongly curved rods, taking very nearly the form of a horseshoe, or of oval rings with the lower end cut off. They measured about 640 microns in one direction and 500 across, with the free ends somewhat tapering. Frequently several were attached together in a series, the top of each about 130 microns above the top of the one following. Being much interested in these peculiar structures, I asked Dr. Smith to send me material of other chimæroids, and this he very kindly did. In a young *Hydrolagus collieri* (Bennett), 5 inches long, I found the structures *in situ*. A mucus canal about 2,180 microns below the dorsal denticles was lined with these horseshoe-like structures, placed obliquely a short distance apart, so that each one partly overlapped two others, as seen from above. The free ends project along the

margins of the canal, which is widely open above, and the structures obviously serve to keep the canal in shape and open.

In the works of Garman, Dean, Bridge, Jordan, etc., I find no mention of these structures; but they may have been recorded in some work not accessible to me in Colorado.

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LABELING MICROSCOPIC SLIDES

TO THE EDITOR OF SCIENCE: I was interested in the note published in SCIENCE, by Zea Northrup, in the July 25 issue, on "A New Method for Labeling Microscopic Slides," for I have been following that method for the last five years. I have found it a very successful way in which to obtain a permanent, clear designation for the slides. It is especially valuable in labeling serial sections, for, as soon as the ribbon has been firmly attached to the slides, the glass near the end of the ribbon is easily cleaned and the label then passes through the remaining parts of the process, until finally it is covered with the balsam and cover glass. This gives complete permanency to the writing and only the destruction of the slide will result in the loss of the label. In this connection it may be interesting to some to speak of two features of numbering slides which, though probably not used exclusively by the writer, he has never seen adopted by other workers. In numbering a long series of slides which contain consecutive sections from one imbedded object it is convenient to assign a decimal number to the individual slides. The practise of the writer has been to assign a whole number to the entire embedding of a certain object preceded by the last two figures of the year number; thus if a certain flower bud is the second piece of imbedding which I have done this year the number of that flower bud is 132. Then the first slide cut from that imbedding is 132.1, or the fifteenth slide is 132.15. It may also occur that more than one piece of an object is included under the serial number 132, in which case the slide number for the fifteenth